

Adrian C. Lo





Neuroscientist, Data Scientist

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About Me

I have a background in theoretical psychology and **statistics**. During the last 5 years I studied and analyzed rodent behavior and molecular biology, but also gained expertise in developing **R programs**, **shiny apps** and **automated reports**. With these tools, I improved the speed and efficiency of data-processing for myself as well as colleagues.

Languages

 Dutch (native) ● ● ● ● ●
 English ● ● ● ● ●
 French ● ● ● ● ●
 German ● ● ● ● ●

Computer Skills

R ● ● ● ● ●
R Markdown ● ● ● ● ●
Visualization (ggplot2) ● ● ● ● ●
Excel ● ● ● ● ●
Machine Learning ● ● ● ● ●
R Shiny ● ● ● ● ●
BI (Tableau) ● ● ● ● ●
SQL ● ● ● ● ●
Python ● ● ● ● ●
HTML ● ● ● ● ●
TeX ● ● ● ● ●
SAS ● ● ● ● ●

Work Experience

2016 – present **Neuroscientist** Université de Lausanne, Switzerland
- Post-doctoral research on the role of RNA binding protein FXR2P in status epilepticus: Behavioral and molecular evaluation (Laboratory of Prof. Claudia Bagni)
- Reference person within the laboratory on statistics and programming
- Responsible for the organisation of the departmental stockroom
2014 – 2015 **Neuroscientist** KU Leuven, Belgium
Post-doctoral research on cue competition and contextual fear learning in rodents and humans. (Laboratory of Prof. Bram Vervliet)

Education

2008 – 2013 PhD student, Neuroscientist KU Leuven, Belgium
2003 – 2008 Master of Science in Theoretical Psychology KU Leuven, Belgium

Certificates and Courses

12/2020 Databases and SQL for Data Science IBM, Coursera
12/2019 Advanced R Shiny SIB, Switzerland
01/2019 Data Management Plan SIB, Switzerland
10/2018 Project Management EPFL, Switzerland
09/2018 Introduction to Data Analysis with Python EPFL Extension School, Switzerland
06/2018 Statistical Methods for Big Data in Life Sciences and Health with R SIB, Switzerland
09/2015 Introduction to SAS LSTAT, Belgium
05/2015 Text Mining with R KU Leuven, Belgium
09/2013 FELASA C - Laboratory Animal Sciences KU Leuven, Belgium

My R programs portfolio

meaR (public repository)

The text files from [Multi-Electrode Arrays](#) contain *in vitro* electrophysiological measurements embedded with text. The numeric **data are extracted** from the text file and a master datafile is assembled. meaR then performs calculations for a variety of electrophysiological parameters and visualizes spike and burst activity for all 60 electrodes over time

phenotyper (private repository, available for discussion)

For the processing and analysis of [Phenotyper](#) data, we can use a cloud service upon payment. Through **reverse engineering**, I designed the phenotyper program that performs similarly to the cloud service and calculates additional behavioral parameters

easyGeno (private repository, available for discussion)

Mouse genotyping is a tedious process that requires several steps prior to the wet lab work: identification of the sample's model, pre-mix calculations, and planning of the assembly plates for PCR and electrophoresis. These can easily take up to half a day time. With easyGeno, an **automated report** is created with R Markdown that contains all these steps ready for the user to follow and optimized for the [QIAxcel apparatus](#). Finally, I developed a follow-up module that extracts the result from the QIAxcel pdf report and **cross-references with our database file** to automate band identification

unidamr (private repository, available for discussion)

Through an **interactive Shiny application**, behavioral data from *Drosophila* are analyzed, categorized as either sleep or awake state, and several parameters are calculated and analyzed

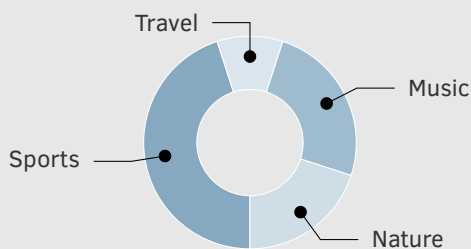
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Soft Skills



Extra-Curricular Activities



 Driver's license: B (2003)

Teaching Experience

- 2019-2020 **Coding Club** Université de Lausanne, Switzerland
Interactive course between PhD students and Postdocs on how to use R for data import, manipulation, visualization and analysis
- 09/2015 **Workshop at Summer School** KU Leuven, Belgium
Subject: "The use of rodent models in fear conditioning, learning and memory"
- 2013 **Bachelor Course at KU Leuven** B-KUL-POM20B
How to use SPSS for basic data manipulation, statistics and SPSS output interpretation

Conferences and Presentations

- 2018 **NCCR-SYNAPSY Conference** Geneva, Switzerland
Cognitive flexibility in a mouse model for Fragile X Syndrome
- 2014 **RIKEN Brain Science Institute** Tokyo, Japan
Treatment with tauroursodeoxycholic acid modulates γ -secretase activity and rescues memory deficits in APP/PS1 mice, an AD mouse model
- 2012 **International Stockholm/Springfield symposium on advances in Alzheimer's disease** Stockholm, Sweden
Behavioural effects of selenium in mouse models of Alzheimer's disease
- 2010 **Forum of European Neurosciences** Amsterdam, The Netherlands
Reversible changes in neurocognitive performance and hippocampal synaptic plasticity in tau mutant mouse lines

Publications (5 most relevant)

For the full list, [please click here](#)

- 2021 **EMBO Reports (in press)**
Absence of RNA binding protein FXR2P prevents prolonged phase of kainate-induced seizures
Lo AC*, Rajan N*, Telley T, Hilal ML, Buzzi A, Simonato M, Achsel T, Bagni C. * authors contributed equally
- 2019 **Nature Communications**
The autism- and schizophrenia-associated protein CYFIP1 regulates bilateral brain connectivity and behaviour
Domínguez-Iturza N, Lo AC, Shah D, Armendáriz M, Vannelli A, Mercaldo V, Trusel M, Li KW, Gastaldo D, Santos AR, Callaerts-Vegh Z, D'Hooge R, Mameli M, Van der Linden A, Smit AB, Achsel T, Bagni C.
- 2017 **Nature Communications**
The non-coding RNA BC1 regulates experience-dependent structural plasticity and learning
Briz V, Restivo L, Pasciuto E, Juczewski K, Mercaldo V, Lo AC, Baatzen P, Gounko NV, Borreca A, Girardi T, Luca R, Nys J, Poorthuis RB, Mansvelder HD, Fisone G, Ammassari-Teule M, Arckens L, Krieger P, Meredith R, Bagni C.
- 2014 **Neuropharmacology**
SSP-002392, a new 5-HT4 receptor agonist, dose-dependently reverses scopolamine-induced learning and memory impairments in C57Bl/6 mice
Lo AC, De Maeyer JH, Vermaercke B, Callaerts-Vegh Z, Schuurkes JA, D'Hooge R.
- 2013 **Science**
Comment on "ApoE-directed therapeutics rapidly clear β -amyloid and reverse deficits in AD mouse models"
Tesseur I*, Lo AC*, Roberfroid A, Dietvorst S, Van Broeck B, Borgers M, Gijssen H, Moechars D, Mercken M, Kemp J, D'Hooge R, De Strooper B. * authors contributed equally